REMARKS

I. Status of the Claims

Claims 1-14 and 16-21 are now currently pending in the present application.

Claims 1-14 currently stand rejected.

II. Claims

Claims *1-14* have been amended as suggested by the Office to more particularly point out what the applicant considers as their invention. Support for the amendments can be found throughout the specification. The claims as originally drafted and now as amended are fully enabled and supported by the specification.

IV. Rejection under 35 U.S.C. §112, First Paragraph

Claim 1-14 stands rejected under 35 U.S.C. §112(1). The applicant respectfully traverses the Office's claim that the claims are not enabled because the claimed invention is fully enabled as claimed. The applicant need not supply examples for every possible subspecies in the related chemical reactions to avoid a rejection. Therefore applicant respectfully requests reconsideration and allowance of all claims now as currently amended.

V. Rejection under 35 U.S.C. §112, Second Paragraph

Claims 1-15 have been rejected under 35 U.S.C. §112, second paragraph. This rejection is respectfully traversed. The claims as previously submitted are

definite and particularly point out the applicant's invention. Claims 1-14 have been amended and claim 15 has been canceled. For purposes of clarification only to aid the Office, the above-cited claims have been amended to clearly point out the applicant's instant invention as fully supported by the specification and thus fully satisfying the Office's requirements.

V. Rejection under 35 U.S.C. §103(a)

Claims 1-14 currently stand rejected under 35 U.S.C. §103(a) as being unpatentable over Jackson (6093827). The applicant respectfully requests reconsideration and allowance of claim 1-14 because applicant has properly made a translation of foreign priority documents that are resubmitted with this response to aid the Examiner. The proper claiming of foreign priority therefore removes the Jackson reference.

Claims 1-14 currently stand rejected under 35 U.S.C. §103(a) as being unpatentable over Pinwinski II (5089496, PTO-1449) in view of Cid. The applicant responds to this rejection through amendment and cancellation of claim 15.

The applicant therefore respectfully requests removal of the obviousness rejection and allowance of claims 1-14 and 16-21 in light of the amendments.

V. Rejection under 35 U.S.C. §102(b)

Claim 15 was rejected under 35 U.S.C. §102(b) as being anticipated by Pinwinski I (WO 89/10369, PTO-1449) because of compounds disclosed. Applicant has canceled claim 15 and therefore the rejection is moot.

Claims 15 currently stands rejected under 35 U.S.C. §102(b) as being unpatentable over Pinwinski II (5089496, PTO-1449). The applicant has canceled claim 15 thus applicant respectfully request removal of the rejection.

Claim 15 stands rejected under 35 U.S.C. §102(b) as being anticipated by Wong I (EP 515158, PTO-1449) by the compounds disclosed on pages 22-23, specifically compounds F, G, and Example 1. Claim 15 has been canceled thus the rejection is moot.

Claim 15 stands rejected under 35 U.S.C. §102(b) as being anticipated by Wong II (EP 524784, PTO-1449) by the compounds disclosed on pages 21. The applicant respectfully requests removal of rejection with the cancellation of claim 15.

V. Rejection under 35 U.S.C. §102(e)

Claims 1-13 currently stand rejected under 35 U.S.C. §102(e) as being anticipated by Jackson (6093827). The applicant furnishes a second certified translation copy for the file and hereby properly claims foreign priority. Therefore the rejection is overcome through a proper claiming of foreign priority.

Claims 1-13 currently stand rejected under 35 U.S.C. §102(e) as being anticipated by Stampa (6084100). The applicant furnishes a second certified translation copy for the file and hereby claim foreign priority. Therefore the rejection is overcome through a proper claiming of foreign priority. The applicant thus respectfully request reconsideration and allowance of claims 1-13.

## I. Conclusion

In view of the cited disclosures and the remarks made and documents provided by the applicant, Claims 1-14 and 16-21 are in condition for allowance. Accordingly, an early notification of allowance is courteously requested. Feel free to contact this office collect if you wish to discuss the application.

Respectfully submitted,

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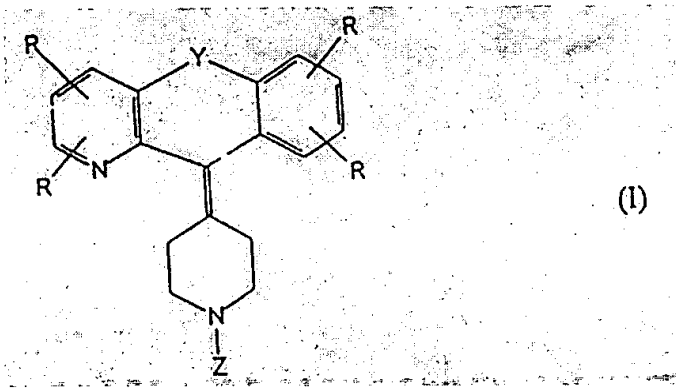
CERTIFICATE OF MAILING UNDER 37 CFR 1.10

I hereby certify that this Express Mail Transmittal Letter and any documents referred to as attached hereto are being deposited with the United States Postal Service on this date, 13 APR 2001, in an "Express mail to Addressee" Express Mail Label No. EF302851817US addressed to Assistant Commissioner for Patents, Box No Fee Amendment, Washington D.C., 20231.

**Anthony M. Lorusso**

## MARKED UP CLAIMS

1. A process for creating 1,4-disubstituted piperidine compounds of formula (I)




(I)

in which

R [independently of one another mean] wherein each said R is a member independently and separately selected from the group consisting of hydrogen, fluorine, chlorine, bromine, straight-chain [or branched]($C_1$-$C_5$) – alkyl, branched ($C_1$-$C_5$)-alkyl, straight-chain ($C_2$-$C_5$) – alkenyl, and, branched ($C_2$-$C_5$) – alkenyl [which in a given case is substituted with fluorine, chlorine, or bromine, with a ($C_1$-$C_5$)-alkyl ether group and/or with phenyl; straight-chain or branched ($C_2$-$C_5$)-alkenyl, which in a given case is substituted with fluorine, chlorine, or bromine, with a ($C_1$-$C_5$)-alkyl ether group and/or phenyl; phenyl, which in a given case is substituted with fluorine, chlorine, bromine, ($C_1$-$C_5$)-alkyl, -COOH, ($C_1$-$C_5$)-alkyl ester, -$NH_2$, a mono- ($C_1$-$C_5$)-alkyl substituted amine and/or a di-($C_1$-$C_5$)-alkyl substituted amine; a hetero-aromatic, which is bonded directly or via straight chain or branched ($C_1$-$C_5$)-alkylene to the pyridine and/or the phenyl ring, and contains a

nitrogen atom and/or a sulfur atom and/or 1,2, or 3 nitrogen atoms and contains a nitrogen atom and/or a sulfur atom and/or 1,2, or 3 nitrogen atoms and a 5- or 6-member ring system which in a given case is substituted with fluorine, chlorine, bromine, ($C_1$-$C_5$)-alkyl, -COOH, ($C_1$-$C_5$)-alkyl ester, -$NH_2$, a mono-($C_1$-$C_5$)-alkyl substituted amine and/or a di-($C_1$-$C_5$)-alkyl substituted amine, or two R substituents bonded to the same ring form an aromatic or hetero-aromatic ring, which in a given case is substituted with fluorine, chlorine, bromine, ($C_1$-$C_5$)-alkyl, -COOH, ($C_1$-$C_5$)-alkyl ester, -$NH_2$, a mono-($C_1$-$C_5$)-alkyl substituted amine and/or a di-($C_1$-$C_5$)-alkyl substituted amine];

Y [means $-(CH_2)_n$, in which n = 0,1,2, or 3;] is an element selected from the group consisting of -$(CH_2)_0$-, -$(CH_2)_1$-, -$(CH_2)_2$-, -$(CH_2)_3$-, oxygen, sulfur; [vinyl], -$CH_2$-O-; -O-$CH_2$-; -$CH_2$-, and [or] -S-$CH_2$-;

Z [independently of one another mean] wherein each said Z is a member selected from the group consisting of hydrogen, -C(O)$R^1$, -C(O)O$R^1$, [-OS(O)$R^2$] -OS(O)$R^2$ and [; or one of the meanings of ] $R^1$ ;

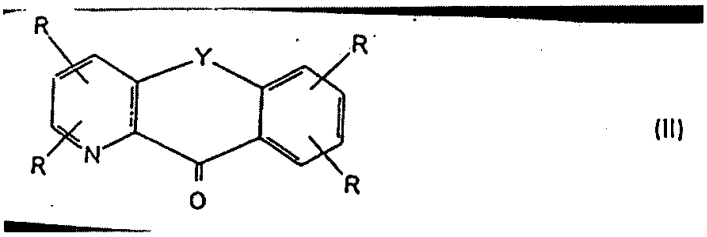
$R^1$ wherein each $R^1$ is an element selected from the group consisting of straight-chain ($C_1$-$C_5$)– alkyl, branched ($C_1$-$C_5$) – alkyl, straight-chain ($C_2$-$C_5$) – alkenyl, branched ($C_2$-$C_5$) – alkenyl;

[independently of one another mean straight-chain or branched ($C_1$-$C_5$)-alkyl, which in a given case is substituted with fluorine, chlorine, or bromine, with a ($C_1$-

$C_5$)-alkyl ether group and/or with phenyl; straight-chain or branched ($C_2$-$C_5$)-alkenyl, which in a given case is substituted with fluorine, chlorine, or bromine, with a ($C_1$-$C_5$)-alkyl ether group and/or phenyl; phenyl, which in a given case is substituted with fluorine, chlorine, bromine, ($C_1$-$C_5$)-alkyl, -COOH, ($C_1$-$C_5$)-alkyl ester, -$NH_2$, a mono- ($C_1$-$C_5$)-alkyl substituted amine and/or a di-($C_1$-$C_5$)-alkyl substituted amine; a hetero-aromatic, which is bonded directly or via straight chain or branched ($C_1$-$C_5$)-alkylene to the pyridine and/or the phenyl ring, and contains a nitrogen atom and/or a sulfur atom and/or 1,2, or 3 nitrogen atoms and contains a nitrogen atom and/or a sulfur atom and/or 1,2, or 3 nitrogen atoms and a 5- or 6-member ring system which in a given case is substituted with fluorine, chlorine, bromine, ($C_1$-$C_5$)-alkyl, -COOH, ($C_1$-$C_5$)-alkyl ester, -$NH_2$, a mono-($C_1$-$C_5$)-alkyl substituted amine and/or a di-($C_1$-$C_5$)-alkyl substituted amine, or straight-chain or branched ($C_1$-$C_5$)-alkyl, which is substituted by such a hetero-aromatic.]

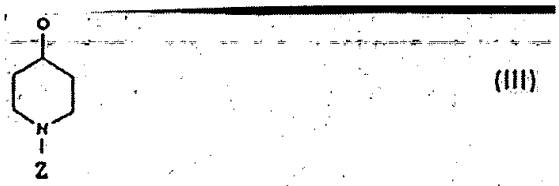
$R^2$ wherein each $R^2$ is an element selected from the group consisting of straight-chain ($C_1$-$C_5$)– alkyl, branched ($C_1$-$C_5$) – alkyl, straight-chain ($C_2$-$C_5$) – alkenyl, branched ($C_2$-$C_5$) – alkenyl; [means one of the meanings of $R^1$, or a bridged saturated isocyclic system, which preferably is derived from camphor sulfonic acid]

wherein a compound of formula (II)



(II)

in which the substituents R and Y have the meanings cited above, with a compound of formula (III)



(III)

in which Z has the meaning specified above, is brought to react in a single process step by means of reductive dimerization

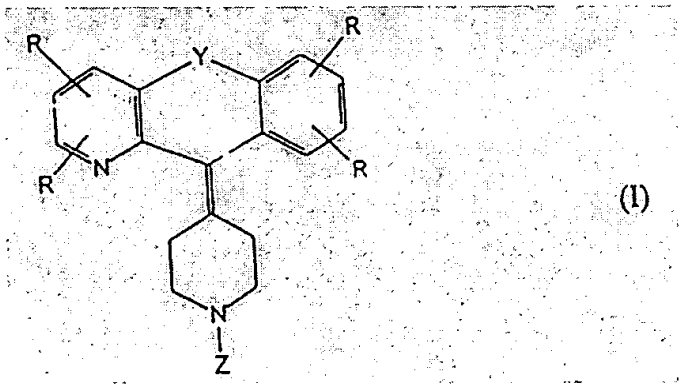
(i) in the presence of a finely dispersed metal compound, wherein said metal compound is an element of the IVth, Vth, VIth subgroup of the periodic table of elements or low-valent oxidation stage of such a corresponding metal compound;

(ii) wherein said finely dispersed metal is produced in situ by means of a reducing agent wherein said reducing agent is selected from a group consisting of alkali metals, metals of the II$^{nd}$ main group, metals of the II$^{nd}$ subgroup, alloys of the metals of the II$^{nd}$ main group, alloys of the metals of the II$^{nd}$ subgroup, inclusion compounds of the metals of the II$^{nd}$ main group containing carbon, inclusion compounds of the metals of the II$^{nd}$ subgroup containing carbon, metal hydrides of the compounds of the metals of the II$^{nd}$ main group, metal hydrides of the

compounds of the metals of the II[nd] subgroup, salts of napthalides anions, and higher polycyclic aromatics; and,

(iii) in the presence of an inert solvent, wherein said inert solvent is chosen from a group consisting of inert ethers, nitrogen-containing unsaturated hetro-aromatics or tertiary amines.

2. (Amended) [The process in accordance with Patent Claim 1, wherein R independently of one another means hydrogen, fluorine, chlorine, bromine, methyl, or trifluoromethyl.] A process for creating 1,4-disubstituted piperidine compounds of formula (I)




(I)

in which

R wherein each said R is a member independently and separately selected from the group consisting of hydrogen, fluorine, chlorine, bromine, methyl, trifluoromethyl,

straight chain ($C_1$-$C_5$) – alkyl, straight chain ($C_1$-$C_5$)-alkyl substituted with fluorine, straight chain ($C_1$-$C_5$) – alkyl substituted with chlorine, straight chain ($C_1$-$C_5$) – alkyl substituted with bromine,

branched ($C_1$-$C_5$) – alkyl, branched ($C_1$-$C_5$)-alkyl substituted with fluorine, branched ($C_1$-$C_5$) – alkyl substituted with chlorine, branched ($C_1$-$C_5$) – alkyl substituted with bromine,

straight-chain ($C_2$-$C_5$) – alkenyl, straight-chain ($C_2$-$C_5$) – alkenyl substituted with fluorine, straight-chain ($C_2$-$C_5$) – alkenyl substituted with chlorine, straight-chain ($C_2$-$C_5$) – alkenyl substituted with bromine,

branched ($C_2$-$C_5$) – alkenyl; branched ($C_2$-$C_5$) – alkenyl substituted with fluorine, branched ($C_2$-$C_5$) – alkenyl substituted with chlorine, and branched ($C_2$-$C_5$) – alkenyl substituted with bromine;

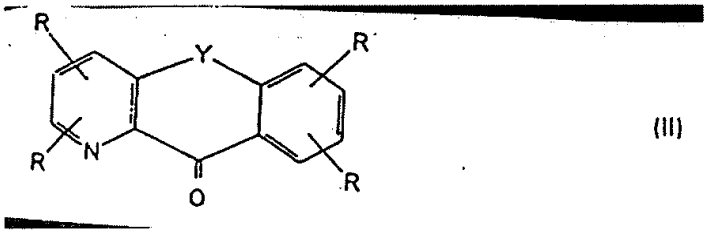
Y is an element selected from the group consisting of -$(CH_2)_0$-, -$(CH_2)_1$-, -$(CH_2)_2$-, -$(CH_2)_3$-, oxygen, sulfur -$CH_2$-O-; -O-$CH_2$-, -$CH_2$-, and -S-$CH_2$-;

Z wherein each said Z is a member selected from the group consisting of hydrogen, -C(O)$R^1$, -C(O)O$R^1$, -OS(O)$R^2$, -C(O)O-$C_2H_5$, straight-chain ($C_1$-$C_5$)– alkyl, branched ($C_1$-$C_5$) – alkyl, straight-chain ($C_2$-$C_5$) – alkenyl, and branched ($C_2$-$C_5$) – alkenyl, wherein $R^1$ is herein defined;

$R^1$ wherein each $R^1$ is an element selected from the group consisting of ethyl, straight-chain ($C_1$-$C_5$)– alkyl, branched ($C_1$-$C_5$) – alkyl, straight-chain ($C_2$-$C_5$) – alkenyl, and branched ($C_2$-$C_5$) – alkenyl;

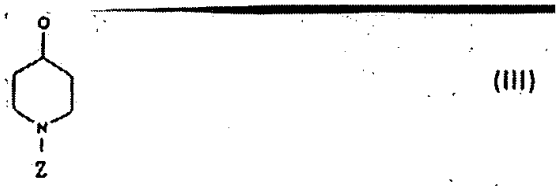
$R^2$ wherein each $R^2$ is an element selected from the group consisting of straight-chain ($C_1$-$C_5$)– alkyl, branched ($C_1$-$C_5$) – alkyl, straight-chain ($C_2$-$C_5$) – alkenyl, branched ($C_2$-$C_5$) – alkenyl, benzyl, and dimethyl amino;

wherein a compound of formula (II)




(II)

in which the substituents R and Y of Compound (II) have the meanings cited above, and is brought into contact with a compound of formula (III)




(III)

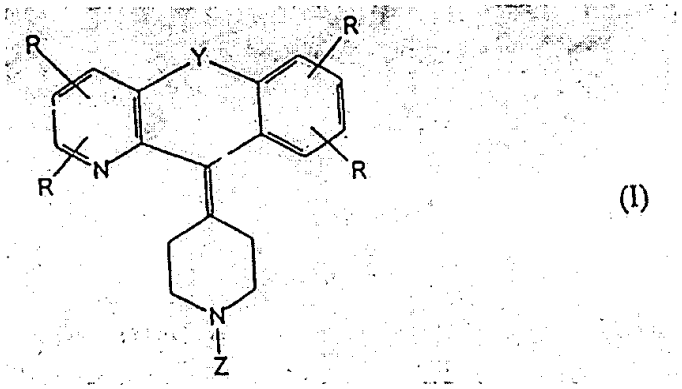
in which Z has the meaning specified above, is brought to react in a single process step by means of reductive dimerization

(i) in the presence of a finely dispersed metal compound, wherein said metal compound is an element selected from the group consisting of chloride of titanium, chloride of zirconium, chloride of vanadium, chloride of molybdenum, chloride of tungsten, and a chloride of uranium;

(ii) wherein said finely dispersed metal is produced in situ by means of a reducing agent wherein the reducing agent being chosen from the group consisting of alkali metals, metals of the IInd main group of the periodic table, alloys of the metals of the Iind main group, inclusion compounds of metals of the Iind main group with carbon, higher polycyclic aromatics, and

(iii) in the presence of an inert solvent, , wherein the solvent is chosen from a group consisting of inert ethers, nitrogen-containing unsaturated hetro-aromatics or the tertiary amines.

3. [The process in accordance with Patent Claim 1, wherein R independently of one another means] A process for creating 1,4-disubstituted piperidine compounds of formula (I)



(I)

in which

R wherein each said R is a member independently and separately selected from the group consisting of hydrogen, fluorine, [or] chlorine, bromine, methyl, trifluoromethyl,

straight chain ($C_1$-$C_5$) – alkyl, straight chain ($C_1$-$C_5$)-alkyl substituted with fluorine, straight chain ($C_1$-$C_5$) – alkyl substituted with chlorine, straight chain ($C_1$-$C_5$) – alkyl substituted with bromine,

branched ($C_1$-$C_5$) – alkyl, branched ($C_1$-$C_5$)-alkyl substituted with fluorine, branched ($C_1$-$C_5$) – alkyl substituted with chlorine, branched ($C_1$-$C_5$) – alkyl substituted with bromine,

straight-chain ($C_2$-$C_5$) – alkenyl, straight-chain ($C_2$-$C_5$) – alkenyl substituted with fluorine, straight-chain ($C_2$-$C_5$) – alkenyl substituted with chlorine, straight-chain ($C_2$-$C_5$) – alkenyl substituted with bromine,

branched ($C_2$-$C_5$) – alkenyl; branched ($C_2$-$C_5$) – alkenyl substituted with fluorine, branched ($C_2$-$C_5$) – alkenyl substituted with chlorine, and branched ($C_2$-$C_5$) – alkenyl substituted with bromine;

Y is an element selected from the group consisting of -$(CH_2)_0$-, -$(CH_2)_1$-, -$(CH_2)_2$-, -$(CH_2)_3$-, oxygen, sulfur, -$CH_2$-O-; -O-$CH_2$-; -$CH_2$-, and -S-$CH_2$-;

Z wherein each said Z is a member selected from the group consisting of hydrogen, -C(O)$R^1$, -C(O)O$R^1$, -OS(O)$R^2$, straight-chain ($C_1$-$C_5$)– alkyl, branched ($C_1$-$C_5$) – alkyl, straight-chain ($C_2$-$C_5$) – alkenyl, and branched ($C_2$-$C_5$) – alkenyl, wherein $R^1$ is herein defined;

$R^1$ wherein each $R^1$ is an element individually selected from the group consisting of straight chain ($C_1$-$C_5$) – alkyl, straight chain ($C_1$-$C_5$)-alkyl substituted with fluorine, straight chain ($C_1$-$C_5$) – alkyl substituted with chlorine, straight chain ($C_1$-$C_5$) – alkyl substituted with bromine, straight chain ($C_1$-$C_5$) – alkyl substituted with a ($C_1$-$C_5$) – alkyl ether group,

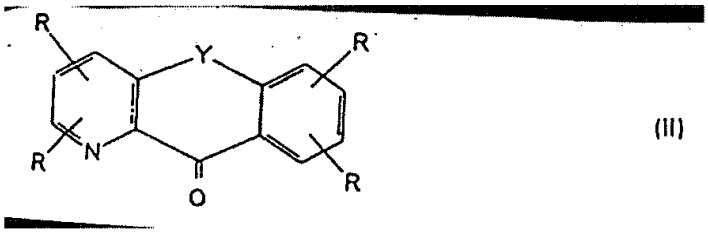
branched ($C_1$-$C_5$) – alkyl, branched ($C_1$-$C_5$)-alkyl substituted with fluorine, branched ($C_1$-$C_5$) – alkyl substituted with chlorine, branched ($C_1$-$C_5$) – alkyl substituted with bromine, branched ($C_1$-$C_5$) – alkyl substituted with a ($C_1$-$C_5$) – alkyl ether group,

straight-chain ($C_2$-$C_5$) – alkenyl, straight-chain ($C_2$-$C_5$) – alkenyl substituted with fluorine, straight-chain ($C_2$-$C_5$) – alkenyl substituted with chlorine, straight-chain ($C_2$-$C_5$) – alkenyl substituted with bromine,

branched ($C_2$-$C_5$) – alkenyl; branched ($C_2$-$C_5$) – alkenyl substituted with fluorine, branched ($C_2$-$C_5$) – alkenyl substituted with chlorine, and branched ($C_2$-$C_5$) – alkenyl substituted with bromine;

$R^2$ wherein each $R^2$ is an element selected from the group consisting of straight-chain ($C_1$-$C_5$)– alkyl, branched ($C_1$-$C_5$) – alkyl, straight-chain ($C_2$-$C_5$) – alkenyl, branched ($C_2$-$C_5$) – alkenyl, benzyl, ethyl, and dimethyl amino;

wherein a compound of formula (II)




(II)

in which the substituents R and Y of Compound (II) have the meanings cited above, and is brought into contact with a compound of formula (III)


(III)

in which Z has the meaning specified above, is brought to react in a single process step by means of reductive dimerization

(i) in the presence of a finely dispersed metal compound, wherein said metal compound is an element selected from the group consisting of chloride of titanium, chloride of zirconium, chloride of vanadium, chloride of molybdenum, chloride of tungsten, and a chloride of uranium;

(ii) wherein said finely dispersed metal is produced in situ by means of a reducing agent wherein the reducing agent being chosen from the group consisting of zinc, lithium, sodium, potassium, magnesium, calcium, zinc alloys, lithium alloys, sodium alloys, potassium alloys, magnesium alloys, calcium alloys, calcium hydride, sodium boron hydride, and lithium aluminum hydride; and,

(iii) in the presence of an inert solvent, , wherein the solvent is chosen from a group consisting of 1,4-dioxane, 1,2-dimethoxyethane, tetrahydrofurane, diethylene glycol dimethylether, tert-butyl-methyl-ether, pyridine and triethyl amine.

6 (Twice amended) The process in accordance with claim 1, wherein the compound of formula (1) only has a single substituent R, which is different from hydrogen, this substituent R being fixed in [R-position] 8-position.

7. (Twice Amended) The process in accordance with claim [1] 2, wherein

Y means $-CH_2-CH_2$;

$R^1$ [means] is selected from a group consisting of $(C_1-C_5)$-alkyl, [preferably]and ethyl;

$R^2$ [means]is selected from a group consisting of $(C_1-C_5)$-alkyl, benzyl,[ vinyl,] or dimethyl amino, [preferably methyl];

Z [means] is selected from the group consisting of $-C(O)R^1$, $-C(O)OR^1$[, preferably $-C(O)OR^1$,] and [preferably] $-C-(O)-C_2H_5$ wherein $R^1$ is defined herein

8. (Twice Amended) The process [in accordance with] according to claim [1] 2 wherein [a halogen compound is used as the metal compund] each of said R is a member independently and separately selected from the group consisting of hydrogen, fluorine, chlorine, bromine, methyl, and trifluoromethyl.

9. (Amended) The process [in accordance with patent] according to claim [8] 1 wherein each of said R is a member independently and separately selected from the group consisting of hydrogen, fluorine, and chlorine [a chloride of titanium, zirconium, vanadium, molybdenum, tungsten, and/or uranium is used as the metal compound].

10. (Amended) The process [in accordance with patent] according to claim [8] 3 wherein said metal compound is titanium [chloride is used as a metal compound

and] tetrachloride, wherein a low-valent stage of [this compound] titanium tetrachloride is [created] made in situ by [means of a ]said reducing agent.

11. (Twice Amended) The process [in accordance with] according to claim 1 wherein said reducing agent is selected from the group consisting of zinc, lithium, sodium, potassium, magnesium, calcium, zinc alloys, lithium alloys, sodium alloys, potassium alloys, magnesium alloys, calcium alloys, calcium hydride, sodium boron hydride, [or] and lithium aluminum hydride [is used as reducing agent].

12. (Twice Amended) The process [in accordance with] according to claim 1 wherein said reducing agent is selected from the group consisting of an [alloy of an] alkali [metal] alloy, [a] metal of the II$^{nd}$ main group, [or the] II$^{nd}$ subgroup [of the periodic table with zinc] metal, zinc, zinc-copper alloy, and a potassium-graphite inclusion [compound is the reducing agent].

13. (Twice Amended) The process [in accordance with] according to claim 1 wherein said solvent is selected from the group consisting of 1,4-dioxane, 1,2-dimethoxyethane, tetrahydrofurane, diethylene glycol dimethylether, tert-butyl-methyl-ether, pyridine [or] and triethyl amine [is used as solvent].

14. (Twice amended) The process [in accordance with] according to claim 1 wherein the compound 4-(8-chloro-5, 6-dihydro-11*H*-benzo-[5,6]-cyclohepta-[1,2-b]pyridine-11-ylidene)-1-piperidine carboxlic acid ethyl-ester is produced.

15. (Canceled)

16. (New) The process according to claim 2 wherein the compound 4-(8-chloro-5, 6-dihydro-11*H*-benzo-[5,6]-cyclohepta-[1,2-b]pyridine-11-ylidene)-1-piperidine carboxlic acid ethyl-ester is produced.

17. (New) The process according to claim 3 wherein the compound 4-(8-chloro-5, 6-dihydro-11*H*-benzo-[5,6]-cyclohepta-[1,2-b]pyridine-11-ylidene)-1-piperidine carboxlic acid ethyl-ester is produced.

18.(New) The process according to claim 7 wherein Z is $-C-(O)-C_2H_5$.

19. (New) The process according to claim 7 wherein $R^1$ the alkyl selected is ethyl.

20. (New) The process according to claim 3 wherein each of said R is a member independently and separately selected from the group consisting of hydrogen, fluorine, and chlorine.

21. (New) The process according to claim 1 wherein said metal compound is a halogen compound.